Complete Summary

GUIDELINE TITLE

Guideline for management of wounds in patients with lower-extremity arterial disease.

BIBLIOGRAPHIC SOURCE(S)

Bonham PA, Flemister BG. Guideline for management of wounds in patients with lower-extremity arterial disease. Mount Laurel (NJ): Wound, Ostomy and Continence Nurses Society (WOCN); 2008. 63 p. (WOCN clinical practice guideline series; no. 1). [268 references]

GUIDELINE STATUS

This is the current release of the guideline.

This guideline updates a previous version: Wound Ostomy and Continence Nurses Society (WOCN). Guideline for management of wounds in patients with lower-extremity arterial disease. Glenview (IL): Wound Ostomy and Continence Nurses Society (WOCN); 2002 Jun. 44 p. (WOCN clinical practice guideline series; no. 1).

COMPLETE SUMMARY CONTENT

SCOPE

DISEASE/CONDITION(S)

- Lower-extremity arterial disease (LEAD)
- Lower-extremity ischemic wounds
- Limb ischemia

GUIDELINE CATEGORY

Diagnosis
Evaluation
Management
Risk Assessment
Screening
Treatment

CLINICAL SPECIALTY

Cardiology
Dermatology
Endocrinology
Family Practice
Internal Medicine
Nursing
Orthopedic Surgery
Physical Medicine and Rehabilitation
Podiatry
Surgery

INTENDED USERS

Advanced Practice Nurses
Allied Health Personnel
Dietitians
Health Care Providers
Nurses
Physical Therapists
Physician Assistants
Physicians

GUIDELINE OBJECTIVE(S)

To support clinical practice by providing consistent research-based information with the goal of improved, cost-effective patient outcomes as well as to stimulate increased wound research

TARGET POPULATION

Patients with lower extremity arterial disease (LEAD) and lower-extremity wounds

INTERVENTIONS AND PRACTICES CONSIDERED

Assessment

1. Assessment of causative and contributive factors and significant signs and symptoms to differentiate types of lower-extremity ulcers
2. Review of health history, including risk factors for lower extremity arterial disease (LEAD), wound history, pain history, history of prescribed and self-prescribed medications

3. Review of pertinent labs, including cholesterol and triglycerides, lipoproteins, and homocysteine, to identify risk markers for lower extremity arterial disease
4. Comprehensive lower-extremity examination, including perfusion status, pedal pulses, ankle brachial index (ABI), ankle pressure, toe pressure and toe brachial index (TBI), assessments for critical limb ischemia and ischemic skin changes, wound characteristics

Management/Treatment

1. Care guided by a clinical wound expert
2. Wound management (cleaning wounds, debridement, dressing, proper use of antiseptics and topical antibiotics)
3. Monitoring for signs of infection
4. Nutrition support
5. Pain management
6. Management of edema
7. Referral for further evaluation
8. Medications, including statins, cilostazol, aspirin, and clopidogrel
9. Surgical options
10. Adjunctive therapies
11. Patient education

Note: The following measures were considered but have not been shown to improve clinical outcomes in LEAD:

- Nutritional measures: vitamin E, garlic and/or fish oil; L-arginine, chelation therapy
- Prostaglandins (PGE-1 and PGE-2) and pentoxyphylline for use in treatment of underlying disease process or resulting wounds
- Skin grafts for wounds in unreconstructed arterial disease

MAJOR OUTCOMES CONSIDERED

- Wound healing
- Complications of lower-extremity arterial disease (LEAD)
- Treatment failure
- Functional status
- Quality of life
- Limb loss
- Mortality rates

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Hand-searches of Published Literature (Primary Sources)
Hand-searches of Published Literature (Secondary Sources)
Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

The primary authors of this guideline independently conducted searches of Medline, CINAHL and Cochrane Library databases for studies published in English from January 2002 through April 2007. The following medical subject headings (MESH) were used to search for each specific question related to lower extremity arterial disease (LEAD): arterial disease, arterial insufficiency, peripheral arterial disease, peripheral vascular disease, lower-extremity arterial disease, peripheral arterial occlusive disease, lower-extremity ischemic wounds and ulcers and critical limb ischemia. The search targeted meta-analyses, randomized controlled trials (RCTs), prospective clinical trials, retrospective studies and systematic reviews. Reference lists of selected articles were also reviewed to identify relevant studies to include.

NUMBER OF SOURCE DOCUMENTS

More than 325 articles were identified and reviewed for this guideline.

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Weighting According to a Rating Scheme (Scheme Given)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Rating of Research Evidence

Level I: A randomized controlled trial (RCT) demonstrating a statistically significant difference in at least one important outcome defined by $p < .05$. Level I trials can conclude the difference is not statistically significant if the sample size is adequate to exclude a 25 percent difference among study arms with 80 percent power.

Level II: A RCT not meeting Level I criteria.

Level III: A non-randomized controlled trial with contemporaneous controls selected by some systematic method. A control might have been selected due to its perceived suitability as a treatment option for an individual patient.

Level IV: A before-and-after study or a case series of at least 10 patients using historical controls or controls drawn from other studies.

Level V: A case series of at least 10 patients with no controls.

Level VI: A case report of fewer than 10 patients.

METHODS USED TO ANALYZE THE EVIDENCE

Review of Published Meta-Analyses
Systematic Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Two primary reviewers read and summarized selected articles. Each study was assigned a level of evidence rating of Level I to Level VI.

To classify the strength of the evidence in this guideline, a level-of-evidence rating (Level A, B or C) has been assigned to specific recommendations. The rating refers to the strength of the evidence for a recommendation and does not relate to the importance of the recommendation. The rating system was adapted from the rating systems described by Sackett (1989), Cook,Guyatt, Laupacis and Sackett (1994) the Agency for Health Care Policy and Research (AHCPR—now called AHRQ) (1992, 1994) and the American College of Cardiology Foundation-American Heart Association (2006). Where a level-of-evidence rating is not included, the information or recommendation presented represents a consensus of the panel members.

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

The Wound, Ostomy and Continence Nurses (WOCN) Society developed this evidence-based guideline using the following process: (a) A panel of nurses from the WOCN membership, representing a wide range of experience and clinical practice backgrounds, convened to plan the guideline format; (b) a topical outline was designed and specific questions about lower-extremity arterial disease (LEAD) were proposed to guide the search of the literature for evidence; and (c) studies reporting primary data relevant to LEAD and specific therapies or diagnostic modalities were included in the review. The panel developed 21 questions related to screening and diagnosis, healing and treatments, infection, topical wound treatments, and management of patients with LEAD to guide the evidence-based review of the literature.

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Level-of-Evidence Rating for Guideline Recommendations*

Level A: Two or more supporting RCTs of at least 10 humans with lower-extremity arterial disease (LEAD) (at Levels I or II), a meta-analysis of RCTs or a Cochrane Systematic Review of RCTs.

Level B: One or more supporting controlled trials of at least 10 humans with LEAD or two or more supporting non-randomized trials of at least 10 humans with LEAD (at Level III).

Level C: Two supporting case series of at least 10 humans with LEAD or expert opinion.

*The rating refers to the strength of the evidence for a recommendation and does not relate to the importance of the recommendation.

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

After the two primary authors reviewed the selected studies, the written summary of the evidence was presented to all committee members for review, discussion, and clarification. A series of conference calls was conducted during 2006 and 2007, and the guideline was finalized incorporating evidence from the studies.

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

A level of evidence rating (**A-C**) has been assigned specific recommendations and is defined at the end of the "Major Recommendations" field. Citations in support of individual recommendations are identified in the original guideline document.

Assessment of Patients with Wounds and Lower Extremity Arterial Disease (LEAD)

1. Prior to treatment, assess causative and contributive factors and significant signs and symptoms to differentiate types of lower-extremity ulcers, which require varying treatments. (See "Algorithm: Differential Assessment" in the appendix of the original guideline document.)
2. Review health history to address risk factors for LEAD: wound history: pain history and history of prescribed/self-prescribed medications.
    a. Assess pain characteristics: onset, duration, location, precipitating/alleviating factors and presence/absence of intermittent claudication.
    b. Differentiate acute limb ischemia (rapid, sudden decrease in limb perfusion often associated with thrombosis) from critical limb ischemia that is chronic and progressive in nature due to atherosclerosis.

    Level of evidence = C

3. Review pertinent labs to identify risk markers for LEAD:
    a. Elevated total cholesterol and triglycerides and reduced high density cholesterol (HDL). ***Level of evidence = B***
    b. Elevated lipoprotein. ***Level of evidence = B***
    c. Elevated homocysteine levels. ***Level of evidence = B***

4. Conduct a comprehensive lower-extremity examination:
    a. Assess functional ability

b. Determine perfusion status by assessing skin temperature, capillary refill, venous refill, color changes, and paresthesias.
c. Determine presence or absence of pedal pulses. Palpate both dorsalis pedis and posterior tibial pulses of each lower extremity. Presence of palpable pulses does not rule out LEAD.

Level of evidence = B

d. Ausculate femoral/popliteal arteries for bruits. ***Level of evidence = C***
e. Observe for signs of neuropathy, which can cause impaired muscle function. ***Level of evidence = B***
f. Determine neurosensory status by screening both feet for loss of protective sensation with a monofilament, tuning fork and percussion hammer.
g. Measure ankle brachial index (ABI) to assess arterial blood flow in the lower extremities and determine level of ischemia: Normal >1.0; LEAD $\leq$0.9, borderline is <0.6 to 0.8, severe ischemia is < 0.5 and critical ischemia <0.4. The ABI can be elevated (>1.3) in individuals with diabetes, renal failure or arthritis who have non-compressible vessels due to calcification of the ankle arteries. ***Level of evidence = B***
h. Recheck the ABI periodically (every 3 months) for patients with non-healing lower extremity wounds. ***Level of evidence = C***
i. Measure toe pressures (TP) to determine a toe brachial index (TBI) for patients whose ABI is >1.3. A systolic TP <30 mmHg (< 50 mmHg in persons with diabetes) or TBI < 0.6 indicates LEAD. ***Level of evidence = B***
j. Assess tissue perfusion with transcutaneous oxygen measurement ($TcPO_2$) if an ulcer is not healing and the ABI is <0.9, TP <30 mmHg, or if unable to perform ABI or TP because of incompressible arteries at the ankle, or the patient has had an amputation. A $TcPO_2$ <40 mmHg is considered hypoxic and is associated with impaired wound healing. ***Level of evidence = A***
k. Consider other noninvasive tests if ABI, toe pressure, TBI, or $TcPO_2$ are inconclusive or cannot be performed.
l. Consider use of magnetic resonance angiography, ***Level of evidence = A***, or computed tomographic angiography to select surgical or endovascular candidates. ***Level of evidence = B***.
m. Consider use of invasive studies such as contrast catheter angiography to definitively determine the anatomic location of LEAD when surgery is planned. ***Level of evidence = B***
n. Assess all patients with ischemic rest pain or pedal wounds for indicators of critical limb ischemia: ankle systolic pressure <50 mmHg, toe systolic pressure <30 mmHg or $TcPO_2$ <30 mmHg. ***Level of evidence = C***
o. Assess the lower extremities for ischemic skin changes: purpura, atrophy of the skin, subcutaneous tissue and muscle; shiny and taut skin, hair loss and/or dystrophic nails.
p. Determine wound characteristics: location, pain, shape, size, color of wound base and type tissue, wound edges, periwound skin, exudate and presence/absence of odor or necrosis (or both).
q. Assess for wound complications: cellulitis, gangrene or osteomyelitis.

r. Refer wounds that are atypical in appearance or unresponsive to 2 to 4 weeks of appropriate therapy for further vascular evaluation or biopsy.

Interventions for Patients with Wounds and LEAD

1. Recommend patients with wounds and LEAD seek care guided by a clinical wound expert. ***Level of evidence = C***
2. Relate wound treatments to adequacy of perfusion status.
3. Cleanse wounds with non-cytotoxic cleansers

Debridement

4. Do not debride stable, black eschars until perfusion status is determined. Debridement may be contraindicated in LEAD wounds. ***Level of evidence = C***
5. Consider revascularization and surgical removal of necrotic tissue from an infected wound on an ischemic leg, which is the treatment of choice for limb salvage. ***Level of evidence = C***
6. Closely monitor autolytic or enzymatic debridement if used for open, draining LEAD wounds with necrotic tissue. ***Level of evidence = C***

Dressings

7. Choose dressings for LEAD wounds permitting frequent visualization and inspection of the wound. ***Level of evidence = C***
8. Conduct a carefully monitored trial of moist dressings for LEAD open and draining wounds with soft slough/necrotic material or exposed bones or tendons. ***Level of evidence = C***
9. Maintain dry, stable eschar in non-infected ischemic wounds. ***Level of evidence = C***

Antibiotics

10. Do not rely on topical antibiotics to treat infected, ischemic wounds. ***Level of evidence = C***
11. Institute systemic antibiotics promptly in patients with critical limb ischemia and evidence of limb infection or cellulitis and/or infected wounds. ***Level of evidence = C***

Infection

12. Monitor LEAD wounds closely for signs/symptoms of infection, which can be subtle because of reduced blood flow. ***Level of evidence = C***
13. Refer infected LEAD wounds, which are limb threatening, for immediate evaluation, culture-guided antibiotics therapy, assessment of perfusion status, and/or need for surgical intervention. ***Level of evidence = C***
14. Use tissue biopsy, considered the gold standard, to confirm diagnosis of infection. Limited studies (not specific to LEAD) have demonstrated that noninvasive, quantitative swab cultures are a reasonable alternative to biopsies in general clinical practice settings. ***Level of evidence = B***

Nutrition

15. Consider niacin or vitamin B-6 dietary supplementation for patients with LEAD. Niacin (in oral dosages of 3,000 mg/d for up to 60 weeks in patients with LEAD) increases HDL-C and decreases triglycerides. ***Level of evidence = B***
16. Daily intake of vitamin B-6 may decrease risk of LEAD. ***Level of evidence = C***
17. Provide nutritional support with 2,000 or more calories preoperatively and postoperatively (if possible), which has benefited patients undergoing amputations. ***Level of evidence = C***

Pain Management

18. Institute a regular, exercise program for medically stable patients with intermittent claudication. Supervised exercise sessions, three times per week, of 30 to 60 minutes of treadmill or track walking to the point of pain, followed by rest, has increased pain-free walking and total walking distance. ***Level of evidence = A***
19. Recommend self-directed walking programs for those who are unwilling or unable to participate in supervised exercise programs. ***Level of evidence = A***
20. Refer patients with severe and intractable pain for surgical evaluation for reconstructable disease. ***Level of evidence = C***
21. Consider spinal cord stimulation (SCS) for patients with intractable pain and with limb ischemia who are unsuitable for reconstruction and whose foot $TcPO_2$ is between 10 to 30 mmHg with an increase of more than 10 mmHg during a trial of SCS. ***Level of evidence = B***

Management of Edema in Patients with Mixed Venous Disease and Moderate Arterial Disease

22. Use reduced compression (23 to 30 mmHg at the ankle) for patients with venous disease, wounds and edema who also have moderate arterial insufficiency (ABI >0.5 to <0.8). Sustained, high compression should not be used for patients with ABI <0.5 mmHg. ***Level of evidence = C***

Referral for Further Evaluation

23. Refer patients for further evaluation with the following symptoms, conditions or assessment findings:
    - Cellulitis, osteomyelitis, atypical ulcers, intractable pain
    - Absence of both pedal and posterior tibial pulses
    - An ABI <0.9 plus any one of the following—an ulcer failing to improve within 2 to 4 weeks of appropriate therapy, severe ischemic pain and/or intermittent claudication
    - Toe pressure <30 mmHg
    - Ankle pressure <50 mmHg or ABI <0.5

    Level of evidence = C

24. Refer patients with ABI <0.4 and/or gangrene for urgent vascular evaluation. ***Level of evidence = C***

Medications

25. Statins. Statin drugs improve ABI, leg function and reduce cardiovascular events. ***Level of evidence = A***
26. Cilostazol (100 mg, oral/twice a day). Cilostazol increases HDL, decreases triglycerides and lipoprotein levels and improves walking distances of patient with intermittent claudication. ***Level of evidence = A***
27. Aspirin (75 to 325 mg oral/day) is recommended for patients (not specific to LEAD) to prevent death and disability from stroke and myocardial infarction (MI). ***Level of evidence = C***
28. Clopidogrel (75 mg, oral/day) may be considered as an effective alternative to aspirin to decrease risk of stroke, myocardial infarction (MI) or vascular deaths for patients. ***Level of evidence = B***

Surgical Options

29. Carefully assess risks versus short-term and long-term benefits of bypass surgery or angioplasty. Short-term surgical benefits may not be sustained long term. ***Level of evidence = A***
30. Assess $TcPO_2$ levels prior to amputation. Preoperative $TcPO_2$ levels greater than 20 mmHg are associated with successful healing after amputation. ***Level of evidence = A***

Adjunctive Therapies

31. Consider a trial of conservative therapies (topical therapy, low frequency ultrasound, electrotherapy [high frequency, low pulsed]) for patients with borderline blood flow and wounds if they are free of limb threatening sepsis. ***Level of evidence = C***
32. Consider hyperbaric oxygen therapy for patients with non-healing, ischemic ulcers. ***Level of evidence = B***
33. Consider arterial flow augmentation (intermittent pneumatic compression) for individuals with intermittent claudication and limb-threatening arterial disease for whom vascular reconstruction is not feasible. ***Level of evidence = B***

Patient Education

34. Teach patients with LEAD about chronic disease management and measures to maintain intact skin and prevent trauma: control diabetes; hypertension and hyperlipidemia; adhere to medication regimen; use neutral or dependent position for legs; avoid chemical, thermal and mechanical trauma; have routine nail and foot care provided by a professional; wear proper-fitting shoes/footwear with socks or hose; provide pressure redistribution for heels, toes and other bony prominences and seek follow-up with a healthcare provider. ***Level of evidence = C***
35. Recommend tobacco cessation, which slows progression of atherosclerosis, decreases risk of cardiovascular events and death and may decrease the overall risk of LEAD after long-term cessation. ***Level of evidence = B***

36. Increase regular exercise and physical activity to improve symptoms of claudication. ***Level of evidence = A***
37. Encourage tobacco users to exercise: eight hours of exercise per week may negate some negative effects of tobacco use. ***Level of evidence = C***

Definitions:

Rating of Evidence

Level I: A randomized controlled trial (RCT) demonstrating a statistically significant difference in at least one important outcome defined by $p < .05$. Level I trials can conclude the difference is not statistically significant if the sample size is adequate to exclude a 25 percent difference among study arms with 80 percent power.

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Level IV: A before-and-after study or a case series of at least 10 patients using historical controls or controls drawn from other studies.

Level V: A case series of at least 10 patients with no controls.

Level VI: A case report of fewer than 10 patients.

Levels-of-Evidence Rating*

Level A: Two or more supporting randomized controlled trials (RCTs) of at least at least 10 humans with lower-extremity arterial disease (LEAD) (at Levels I or II), a meta-analysis of RCTs or a Cochrane Systematic Review of RCTs.

Level B: One or more supporting controlled trials of at least 10 humans with LEAD or two or more supporting non-randomized trials of at least 10 humans with LEAD (at Level III).

Level C: Two supporting case series of at least 10 humans with LEAD or expert opinion.

*The rating refers to the strength of the evidence for a recommendation and does not relate to the importance of the recommendation.

CLINICAL ALGORITHM(S)

An algorithm is provided in the appendix of the original guideline document for the differential assessment of wound etiology.

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of evidence supporting the recommendations is identified and graded for selected recommendations (see "Major Recommendations").

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

- Identification of patients with lower-extremity arterial disease (LEAD) who are at risk for developing wounds
- Identification of patients whose current wounds are caused or complicated by LEAD
- Implementation of appropriate strategies and plans may:
    - Reduce or eliminate known modifiable risk factors for LEAD
    - Attain/maintain intact skin
    - Reduce pain
    - Prevent complications
    - Promptly identify/manage complications
    - Optimize potential for wound healing
    - Promote limb preservation
    - Improve functional status of symptomatic patients
    - Involve patient/caregiver in self-management

POTENTIAL HARMS

- The clinical usefulness of thienopyridines is limited by unacceptable side effects such as neutropenia due to bone-marrow suppression as well as thrombotic thrombocytopenia purpura.
- The clinical usefulness of clopidogrel must be weighed against the side effects (risk of major bleeding) and high costs.
- There is a potential for rebound mechanism after stopping clopidogrel.
- Due to the high risk of hemorrhage or death, thrombolysis should be reserved for patients with limb-threatening ischemia.
- Wounds treated with topical antibiotics may develop resistant organisms over time.

CONTRAINDICATIONS

CONTRAINDICATIONS

- Surgical and endovascular treatments are not indicated for patients with decreased limb perfusion (ankle brachial index < 0.4) in the absence of clinical symptoms of critical limb ischemia.
- Mechanical, non-selective debridement is contraindicated in arterial wounds
- Stable, black eschars should not be debrided until perfusion status is determined. Debridement may be contraindicated in lower-extremity arterial disease (LEAD) wounds.

- Sustained, high compression should not be used for patients with ABI < 0.5.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

IMPLEMENTATION TOOLS

Clinical Algorithm

For information about availability, see the "Availability of Companion Documents" and "Patient Resources" fields below.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Getting Better
Living with Illness

IOM DOMAIN

Effectiveness
Patient-centeredness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

Bonham PA, Flemister BG. Guideline for management of wounds in patients with lower-extremity arterial disease. Mount Laurel (NJ): Wound, Ostomy and Continence Nurses Society (WOCN); 2008. 63 p. (WOCN clinical practice guideline series; no. 1). [268 references]

ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

2002 Jun (revised 2008)

GUIDELINE DEVELOPER(S)

Wound, Ostomy, and Continence Nurses Society - Professional Association

SOURCE(S) OF FUNDING

No funding source has been identified.

GUIDELINE COMMITTEE

Wound, Ostomy, Continence Nurses (WOCN) Lower Extremity-Arterial Disease Wound Guidelines Task Force

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

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FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Individuals involved in developing clinical practice guidelines are charged by the Wound, Ostomy and Continence Nurses (WOCN) Society to develop objective, comprehensive and practical guidelines. To ensure the integrity of the WOCN Society and the Clinical Practice Guideline Program, prior to participating in any guideline activity, participants submit a Disclosure Form to WOCN regarding any financial relationships with commercial companies creating a conflict when the company's products or services are related to the subject of the guideline. Members of the guideline panel submitted a Disclosure Form, which was reviewed by the WOCN Executive Director, who determined no conflict of interest exists with any individual panel member.

GUIDELINE STATUS

This is the current release of the guideline.

This guideline updates a previous version: Wound Ostomy and Continence Nurses Society (WOCN). Guideline for management of wounds in patients with lower-extremity arterial disease. Glenview (IL): Wound Ostomy and Continence Nurses Society (WOCN); 2002 Jun. 44 p. (WOCN clinical practice guideline series; no. 1).

GUIDELINE AVAILABILITY

Electronic copies: Not available at this time.

Print copies: Available for purchase for a nominal fee from the Wound Ostomy and Continence Nurses Society (WOCN), 15000 Commerce Parkway, Suite C, Mt. Laurel, NJ, 08054; Web site: www.wocn.org. Orders can be placed thru the WOCN Web site or via telephone at (888) 224-9626.

AVAILABILITY OF COMPANION DOCUMENTS

None available

PATIENT RESOURCES

None available

NGC STATUS

This NGC summary was completed by ECRI on December 13, 2002. The information was verified by the guideline developer on January 13, 2003. This summary was updated by ECRI Institute on July 25, 2008. The updated information was verified by the guideline developer on August 5, 2008.

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